



## Complete Summary

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### GUIDELINE TITLE

Disease management of atopic dermatitis: an updated practice parameter.

### BIBLIOGRAPHIC SOURCE(S)

Leung DY, Nicklas RA, Li JT, Bernstein IL, Blessing-Moore J, Boguniewicz M, Chapman JA, Khan DA, Lang D, Lee RE, Portnoy JM, Schuller DE, Spector SL, Tilles SA. Disease management of atopic dermatitis: an updated practice parameter. Joint Task Force on Practice Parameters. Ann Allergy Asthma Immunol 2004 Sep;93(3 Suppl 2):S1-21. [127 references] [PubMed](#)

### GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Joint Council of Allergy, Asthma and Immunology. Disease management of atopic dermatitis: a practice parameter. Ann Allergy Asthma Immunol 1997 Sep;79(3):197-211.

### \*\* REGULATORY ALERT \*\*

### FDA WARNING/REGULATORY ALERT

Note from the National Guideline Clearinghouse: This guideline references drugs for which important revised regulatory information has been released.

On January 20, 2006, U.S. Food and Drug Administration (FDA) announced the approval of updated labeling for two topical eczema drugs, Elidel Cream (pimecrolimus) and Protopic Ointment (tacrolimus). The labeling will be updated with a boxed warning about a possible risk of cancer and a Medication Guide (FDA-approved patient labeling) will be distributed to help ensure that patients using these prescription medicines are aware of this concern. The new labeling also clarifies that these drugs are recommended for use as second-line treatments. This means that other prescription topical medicines should be tried first. Use of these drugs in children under 2 years of age is not recommended. See the [FDA Web site](#) for more information.

### COMPLETE SUMMARY CONTENT

\*\* REGULATORY ALERT \*\*

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## SCOPE

### DISEASE/CONDITION(S)

Atopic dermatitis

### GUIDELINE CATEGORY

Diagnosis  
Evaluation  
Management  
Treatment

### CLINICAL SPECIALTY

Allergy and Immunology  
Dermatology  
Family Practice  
Internal Medicine  
Pediatrics

### INTENDED USERS

Physicians

### GUIDELINE OBJECTIVE(S)

To provide practice parameters for the diagnosis and management of atopic dermatitis

### TARGET POPULATION

Infants, children, and adults with atopic dermatitis

### INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis/Evaluation

1. Diagnostic criteria of atopic dermatitis
2. Clinical examination
3. Laboratory studies (e.g. serum IgE)
4. Prick skin testing/allergy skin tests

## 5. Evaluation of severity of atopic dermatitis

### Treatment/Management:

1. Individualized treatment planning
2. First-line treatment
  - Skin hydration with moisturizers and emollients (lotions, creams, and ointments)
  - Topical corticosteroids
  - Topical calcineurin inhibitors (pimecrolimus, tacrolimus)
  - Tar preparation
  - Oral antihistamines Note: Topical antihistamines not generally recommended
  - Identification and elimination of triggering factors irritants, allergens, emotional stressors, infectious agents (antibiotics as indicated for infection)
3. Alternative treatment
  - Application of wet dressings in combination with topical corticosteroids
  - Short-term treatment with systemic corticosteroids with appropriate tapering to avoid rebound
  - Phototherapy with ultraviolet light
  - Immunomodulatory or immunosuppressive agents
  - Hospitalization to separate the patient from environmental allergens while administering other therapies
  - Allergen immunotherapy when aeroallergens are clearly implicated in dermatitis flares
  - Risk-benefit analysis of alternative therapies
4. Investigational treatment
5. Patient education
6. Consultation with atopic dermatitis specialist
7. Ongoing evaluation and follow-up

### MAJOR OUTCOMES CONSIDERED

- Efficacy of management interventions at relieving symptoms and reducing cutaneous inflammation
- Quality of life (lost work days, lost school days, sleep disturbance)

## METHODOLOGY

### METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

### DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The Joint Task Force revised the initial draft into a working draft of the document, which included a review of the medical literature using a variety of engines such as PubMed.

### NUMBER OF SOURCE DOCUMENTS

Not stated

## METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

### RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Category of Evidence

Ia Evidence from meta-analysis of randomized controlled trials

Ib Evidence from at least 1 randomized controlled trial

IIa Evidence from at least 1 controlled study without randomization

IIb Evidence from at least 1 other type of quasi-experimental study

III Evidence from nonexperimental descriptive studies, such as comparative studies, correlation studies, and case-control studies

IV Evidence from expert committee reports or opinions or clinical experience of respected authorities, or both

LB Evidence from laboratory-based studies

### METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

### DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Published clinical studies were rated by category of evidence and used to establish the strength of a clinical recommendation.

### METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

### DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

### RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

- A. Directly based on category I evidence
- B. Directly based on category II evidence or extrapolated from category I evidence

- C. Directly based on category III evidence or extrapolated from category I or II evidence
- D. Directly based on category IV evidence or extrapolated from category I, II, or III evidence
- E. Directly based on category LB evidence
- F. Based on consensus of the Joint Task Force on Practice Parameters

## COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

## METHOD OF GUIDELINE VALIDATION

Internal Peer Review

## DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The 3 national allergy and immunology societies, the American College of Allergy, Asthma, and Immunology (ACAAI), the American Academy of Allergy, Asthma, and Immunology (AAAAI), and the Joint Council of Allergy, Asthma, and Immunology (JCAAI), have given the Task Force the responsibility for updating existing parameters. This document builds on the original Parameter on Atopic Dermatitis. It was written and reviewed by subspecialists in allergy and immunology and was funded by the 3 allergy and immunology organizations noted above. Donald Y. M. Leung, MD, PhD, who chaired the workgroup that developed the original Parameter on Atopic Dermatitis, prepared the initial draft of the updated parameter on this condition. The Joint Task Force revised the initial draft into a working draft of the document, which included a review of the medical literature using a variety of search engines such as PubMed. The working draft of the updated Parameter on Atopic Dermatitis was then reviewed by a number of experts in allergy and immunology and specifically by experts on atopic dermatitis. This document, therefore, represents an evidence-based, broadly accepted consensus opinion.

## RECOMMENDATIONS

### MAJOR RECOMMENDATIONS

This practice parameter includes an algorithm on the diagnosis and management of atopic dermatitis accompanied by annotations (numbered to correspond with the algorithm). Guideline recommendations are presented in the form of summary statements. After each statement is a letter in parentheses that indicates the strength of the recommendation. Categories of evidence (Ia, Ib, IIa, IIb, III, IV, LB) and strength of recommendations (A-F) are defined at the end of the "Major Recommendations" field.

#### Annotations

Annotation 1: Patient Presents with Skin Manifestations Consistent with Atopic Dermatitis (e.g., an Eczematous Pruritic Dermatitis)

There is no objective laboratory test for the diagnosis of atopic dermatitis. Therefore, the diagnosis of atopic dermatitis is based on a constellation of clinical features. These include (1) the essential feature, which is a pruritic dermatitis; (2) typical features, such as facial and extensor eczema in infants and children, flexural eczema in adults, and chronic or relapsing dermatitis; (3) frequently associated features, such as personal or family history of atopic disease, xerosis, cutaneous infections, nonspecific dermatitis of the hands or feet, elevated serum immunoglobulin E (IgE) levels, frequent occurrence of nonspecific decrease in cell-mediated immune response (anergy), positive immediate-type allergy skin tests and early age of onset; and (4) other features, such as white dermatographism and delayed blanch response, anterior subcapsular cataracts, keratoconus, Dennie-Morgan infraorbital folds, orbital darkening, facial erythema, or pallor.

#### Annotation 2: Evaluation Based on History and Physical Examination Diagnostic for Atopic Dermatitis?

Atopic dermatitis often is associated with an early age of onset, with approximately 80% of cases starting before the age of 5 years. It frequently is associated with respiratory allergy and a number of other features, such as Dennie-Morgan infraorbital folds, white dermatographism, and facial pallor.

Acute and subacute lesions of atopic dermatitis are characterized by intensely pruritic, erythematous papulovesicles associated with excoriation and serous exudate. Lesions that do not appear papulovesicular clinically must demonstrate spongiosis histologically. Chronic atopic dermatitis is characterized by lichenification, papules, and excoriations. At all stages of atopic dermatitis, patients usually have dry skin. The distribution and skin reaction pattern vary according to the patient's age and disease activity. The skin distribution pattern in infants and young children generally involves the face, neck, and extensor skin surfaces. In contrast, in older children and adults who have long-standing skin disease, lichenification and localization of the rash to the flexural folds of the extremities usually are found. Chronic hand (and/or foot) eczema may be the primary or sole manifestation of many atopic adults.

#### Annotation 3: Consideration of Other Conditions

A firm diagnosis of atopic dermatitis depends on the exclusion of other skin conditions with similar symptoms and signs. Failure of any response to "standardized" management of atopic dermatitis is a reason to consider other eczematous conditions. Skin conditions that may mimic atopic dermatitis fall into the following categories: (1) chronic dermatoses, such as seborrheic and contact dermatitis, nummular eczema, psoriasis, and ichthyoses; (2) infections and infestations such as scabies, human immunodeficiency virus, and dermatophytosis; (3) malignancies, such as cutaneous T-cell lymphoma and Letterer-Siwe disease; (4) immunologic disorders, such as dermatitis herpetiformis, graft-vs-host disease, and dermatomyositis; (5) immunodeficiencies, such as Wiskott-Aldrich, severe combined immunodeficiency disease, hyper-IgE, and DiGeorge syndrome; and (6) metabolic disorders, such as zinc, pyridoxine, or niacin deficiency and phenylketonuria. In situations in which the diagnosis is not obvious, a skin biopsy should be considered. The skin biopsy should be performed by a physician trained and experienced in performing the procedure and should be interpreted by a qualified dermatopathologist.

#### Annotation 4: Is the Atopic Dermatitis Severe?

Severe atopic dermatitis is characterized by intensely pruritic, widespread skin lesions that often are complicated by persistent bacterial, viral, or fungal infections. The presence of keratoconus, keratoconjunctivitis, anterior cataracts, and eczema vaccinatum suggests that the atopic dermatitis is particularly severe, which may be related to chronicity.

The extent and severity of atopic dermatitis can be determined by careful examination of the patient's skin, grading the extent of affected areas (e.g., percentage of involvement of the head, upper limbs, trunk, and lower limbs), and defining the severity of the following signs of eczema: induration, erythema, excoriation, lichenification, scaling, oozing, weeping, and crusting. In general, patients who have more than 20% skin involvement (or 10% of skin involvement if affected areas include the eyelids, hands, or intertriginous areas) that has not been responsive to first-line treatment should be considered for consultation with a specialist. Other patients who should be considered as having severe atopic dermatitis include:

- Patients with extensive skin involvement who are at risk for exfoliation
- Patients who require ongoing or frequent treatment with high-potency topical glucocorticoids or systemic glucocorticoids
- Patients who require hospitalization for severe eczema or skin infections related to the atopic dermatitis
- Patients with ocular or infectious complications
- Patients who have significant disruption of their quality of life (e.g., sleepless nights, school or work days lost)
- Patients who are generally erythrodermic

Patients not previously receiving appropriate treatment for atopic dermatitis should be started on first-line therapy, and attempts should be made to identify potential triggers.

#### Annotation 5: Management of Atopic Dermatitis

The treatment of atopic dermatitis is directed at symptom relief and reduction of cutaneous inflammation. Characterization of each patient's skin disease severity and the reduction of exacerbating factors are critical for effective management. All patients require skin hydration in combination with an effective emollient. Potential trigger factors should be identified and eliminated. These include irritants, allergens, and emotional stresses. Therapy must be individualized and is dependent on whether the patient is experiencing an acute flare or dealing with the management of chronic atopic dermatitis.

The severity of atopic dermatitis is based on the extent of skin involvement, the intensity of pruritus, the presence of complications, the effect on quality of life, and the amount of medication required for control.

The initial management of atopic dermatitis may consist of the following categories of treatment: hydration, topical corticosteroids, topical calcineurin inhibitors, tar preparations, and antihistamines.

Tacrolimus, a calcineurin inhibitor, has been shown to be effective and safe for use in atopic dermatitis. Most patients experience a dramatic reduction of pruritus within 3 days of initiating treatment, as well as significant improvement in quality of life. Pimecrolimus also has been shown to be effective and safe for the treatment of atopic dermatitis. When used as long-term maintenance therapy, topical preparations of this drug reduce the number of flares of atopic dermatitis and the requirement for corticosteroid treatment.

There are many factors that may contribute to exacerbations of atopic dermatitis, including food allergens, aeroallergens, infections, temperature, humidity, irritants, and emotional stress.

Skin testing or in vitro testing for IgE antibodies can be useful in the identification of potential allergens. In particular, negative skin tests or in vitro tests can be used to exclude allergic trigger factors as a cause of atopic dermatitis. Positive skin test results or in vitro test results do not prove that a particular allergen causes clinical symptoms, but they may guide the clinician in considering possible causes. This is particularly true in the case of foods, where controlled food challenges or elimination diets may be needed to confirm or exclude clinical sensitivity to foods.

Skin infections should be treated with short courses of appropriate antimicrobial therapy, with an emphasis on appropriate treatment for staphylococcal infections. Herpetic and dermatophytic infections also need to be considered and treated after appropriate diagnosis has been confirmed.

#### Annotation 6: Is the Management Successful?

Response to therapy may be classified as a complete response, a partial response, or a treatment failure. Complete response and eradication of the patient's eczema, in the short term, is unusual unless there is a clear-cut trigger (e.g., a food allergen that could be eliminated). Atopic dermatitis is a chronic relapsing skin condition, and therefore most patients will have a partial response with reduction in pruritus and the extent of skin disease. These patients will need long-term follow-up for adjustment of medications according to the severity of the illness. Patients who do not respond to treatment should be completely reassessed to be certain of the diagnosis, and alternative treatment should be considered.

#### Annotation 7: Follow-up

To achieve effective control of a patient's atopic dermatitis, it is important to educate patients and family members about the chronic nature of their disease, exacerbating factors, and appropriate treatment options. This is important to ensure cooperation and compliance with the treatment plan. Written information that includes detailed skin care recommendations, environmental control, and general information about the disease should be provided. Patients should be educated on how to monitor their disease and know how to respond to changes in their status and when to seek additional medical help. The treatment plan should be reviewed during follow-up visits, and the patient and/or parent should demonstrate an appropriate level of understanding to ensure a good outcome. Adequate time and teaching materials are necessary to provide effective



education. Patient support organizations that provide updates on progress in atopic dermatitis research are important resources for these patients. Follow-up of patients with atopic dermatitis also should include evaluation for potential triggers of exacerbations (e.g., aeroallergens, infection, emotional factors) and cooperative management with the patient and/or parent to prevent such exacerbations.

#### Annotation 8: Reassess: Is Diagnosis of Atopic Dermatitis Correct?

In patients who do not achieve the goals of atopic dermatitis management, it is important to reassess whether the diagnosis is correct. With the lack of a characteristic skin lesion or a confirmatory laboratory test result, the diagnosis depends on clinical symptoms and the physical examination. Concomitant allergic rhinitis and/or asthma increase the likelihood that the diagnosis of atopic dermatitis is correct. As discussed in annotation 1, many skin conditions may masquerade as atopic dermatitis.

When reassessing patients, it is helpful to consider the following points. Most patients who present with atopic dermatitis are younger than 5 years but are infrequently younger than 6 weeks. Any infant with an eczematous rash presenting earlier than the first month of life should be carefully evaluated for the presence of congenital immunodeficiency, particularly if the course is complicated by recurrent infections and failure to thrive. Atopic dermatitis does not usually affect the diaper area or the nose exclusively. Differentiation of seborrheic dermatitis from atopic dermatitis may be difficult in infants. It is important to consider contact dermatitis and skin infections as complicating factors.

#### Annotation 9: Consultation with an Atopic Dermatitis Specialist for Consideration of Other Conditions

Patients who are refractory to first-line therapy and who have severe atopic dermatitis with significant dysfunction should have a consultation with an atopic dermatitis specialist, such as an allergist or dermatologist. Such consultation is recommended when the diagnosis of atopic dermatitis is in doubt and for identification of potential allergen triggers, patient education, and implementation of alternative therapies, including potent anti-inflammatory and immunomodulatory agents.

Cooperation between the patient and/or the patient's guardian(s), the primary care physician, and the allergist or dermatologist is important in the implementation of strategies necessary for the care of patients with chronic atopic dermatitis. Even when an atopic dermatitis specialist is consulted, the primary care physician continues to play an important role in the care of patients with atopic dermatitis by ensuring continuity of care.

#### Annotation 10: Consultation with an Atopic Dermatitis Specialist: Intensification of Management and Treatment

When atopic dermatitis is either severe or has not responded to appropriate first-line management strategies, specialist consultation should be obtained. This allows both a reevaluation of first-line treatment approaches (e.g., hydration, emollients, topical corticosteroids, pimecrolimus, tacrolimus, and tar preparations)

and consideration of alternative therapy. Examples of alternative strategies include (1) the application of wet dressings in combination with topical corticosteroids; (2) short-term treatment with systemic corticosteroids with appropriate tapering to avoid rebound; (3) phototherapy with ultraviolet light (UV-B or UV-A [PUVA]); (4) immunomodulatory or immunosuppressive agents; (5) hospitalization to separate the patient from environmental allergens while administering other therapies; and (6) allergen immunotherapy when aeroallergens are clearly implicated in dermatitis flares. In light of potential adverse effects, a careful risk-benefit analysis should be undertaken before initiating any of these alternative therapies. For patients who do not respond to these approaches, investigational treatment can be considered.

### Summary Statements

#### Definitions

Summary Statement 1. Atopic dermatitis is a familial, chronic inflammatory skin disease that commonly presents during early infancy and childhood but can persist or start in adulthood. (C)

#### Immunopathology

Summary Statement 2. Most individuals with atopic dermatitis have elevated serum IgE levels, which are often very high. (C)

Summary Statement 3. Pathogenesis of atopic dermatitis involves a complex inflammatory process associated with IgE-bearing Langerhans cells, atopic keratinocytes, lymphocytes, monocytes/macrophages, eosinophils, and mast cells. (C)

Summary Statement 4. There is an increased frequency of  $T_H2$  cells producing interleukin (IL)-4, IL-5, and IL-13, but little interferon-gamma has been found in the peripheral blood and acute skin lesions of patients with atopic dermatitis. The clinical manifestations of atopic dermatitis result in large part from stimulation of the  $T_H2$  wing of the immunologic pathways. (C)

Summary Statement 5. There is a complex interaction among susceptibility genes, the host environment, and multiple immunologic cells, leading to acute and chronic lesions that characterize this skin disease. (B)

#### Clinical Diagnosis

Summary Statement 6. There is no objective diagnostic test for the clinical confirmation of atopic dermatitis. (D)

Summary Statement 7. The diagnosis of atopic dermatitis is based on a constellation of clinical features. (D)

Summary Statement 8. Pruritus and chronic or relapsing eczematous lesions with typical morphology and distribution in patients with a history of atopy are essential for diagnosis. (F)

Summary Statement 9. Acute and subacute skin lesions are most often seen in infants and young children and are characterized by intensely pruritic erythematous papulovesicular lesions associated with excoriation and serous exudate. (D)

Summary Statement 10. Chronic atopic dermatitis is characterized by lichenification, papules, and excoriations. (D)

### First-line Management and Treatment

Summary Statement 11. The intensity of management and treatment of atopic dermatitis is dictated by the severity of illness, which relates to the effect of atopic dermatitis on the quality of life of the patient and his or her family. (A)

Summary Statement 12. Successful management requires a systematic, multipronged approach that includes antipruritic therapy, skin hydration, topical anti-inflammatory medications, and the identification and possible elimination of exacerbating factors. (A)

### Skin Hydration

Summary Statement 13. Atopic dermatitis is characterized by reduced skin barrier function due to loss of vital lipids, which leads to enhanced water loss and dry skin. (E)

Summary Statement 14. Moisturizers such as lukewarm soaking baths for at least 20 minutes followed by the application of an occlusive emollient to retain moisture can give the patient symptomatic relief. (D)

Summary Statement 15. Emollients, available in the form of lotions, creams, and ointments, should be used as first-line therapy. (D)

### Topical Corticosteroids

Summary Statement 16. Topical corticosteroids, applied to areas of eczema, are effective treatment for atopic dermatitis. (A)

Summary Statement 17. Low-potency corticosteroids are recommended for maintenance therapy, whereas intermediate-and high-potency corticosteroids should be used for the treatment of clinical exacerbation and applied to affected areas of skin over short periods of time. (A)

Summary Statement 18. Potent fluorinated corticosteroids should be avoided on the face, the eyelids, the genitalia, and the intertriginous areas, as well as in young infants. (D)

Summary Statement 19. Ultrahigh-potency corticosteroids should be used only for very short periods of time (several days) and only in areas that are lichenified. (D)

Summary Statement 20. The degree of corticosteroid absorption through the skin, and hence the potential for systemic adverse effects, is directly dependent on the surface area of the skin involved, the use of occlusive dressing, and the potency of the corticosteroid preparation. (D)

#### Topical Calcineurin Inhibitors

##### Tacrolimus

Summary Statement 21. Tacrolimus ointment has been shown to be effective and safe in both adults and children for the treatment of mild-to-moderately severe atopic dermatitis, with most patients experiencing a reduction of pruritus within 3 days of initiating therapy. (A)

Summary Statement 22. Tacrolimus ointment applied on up to 100% of the body surface in adults and children has demonstrated sustained efficacy with no significant systemic adverse effects. (A)

Summary Statement 23. A local burning sensation is the most common adverse effect associated with tacrolimus. This may limit its usefulness in certain patients. (A)

Summary Statement 24. Tacrolimus ointment can be used safely for facial and eyelid eczema. (D)

##### Pimecrolimus

Summary Statement 25. Topical pimecrolimus cream is a calcineurin inhibitor that decreases the number of flares of atopic dermatitis, reduces the need for corticosteroids, and controls pruritus. (A)

#### Tar Preparations

Summary Statement 26. Although tar preparations are widely used in the treatment of atopic dermatitis, there are no randomized, controlled studies that have demonstrated their efficacy. (A)

Summary Statement 27. Newer coal tar products have been developed that are more cosmetically acceptable, with respect to odor and staining of clothes, than some older products. (B)

Summary Statement 28. Tar preparations should not be used on acutely inflamed skin, since this may result in additional skin irritation. (D)

#### Antihistamines

Summary Statement 29. Some patients may benefit from the use of antihistamines for the relief of pruritus associated with atopic dermatitis. (C)

Summary Statement 30. Treatment of atopic dermatitis with topical antihistamines is generally not recommended because of potential cutaneous sensitization. (C)

#### Identification and Elimination of Triggering Factors

Summary Statement 31. Avoidance of common irritants (e.g., soaps, toiletries, wool, chemicals) that trigger the itch-scratch cycle is recommended. (B)

Summary Statement 32. Control of temperature and humidity may be useful for preventing pruritus. (D)

Summary Statement 33. Aeroallergens such as house dust mites, animal allergens, and pollens may cause exacerbation, and therefore exposure to them should be minimized. (A)

Summary Statement 34. Possible allergenic triggers of atopic dermatitis can be confirmed by skin tests and in vitro tests for specific IgE antibodies and in some cases by patch tests that may produce immediate or delayed reactions to protein allergens. (B)

Summary Statement 35. Food allergens trigger atopic dermatitis more commonly in young infants and children than in adults. (D)

#### Microbes

Summary Statement 36. Patients with moderate-to-severe atopic dermatitis have been found to make IgE antibodies against staphylococcal toxins present on their skin. (B)

Summary Statement 37. A course of an appropriate systemic antibiotic should be considered in patients who are heavily colonized or infected with staphylococcal aureus. Antibiotic treatment maybe more difficult if staphylococcal aureus is resistant. (D)

Summary Statement 38. Atopic dermatitis can be complicated by recurrent viral skin infections, such as herpes simplex, warts, and molluscum contagiosum. (D)

Summary Statement 39. Smallpox vaccination or even exposure of patients with atopic dermatitis to recently vaccinated individuals may cause a severe, widespread, potentially fatal dermatitis called eczema vaccinatum, which is similar in appearance to eczema herpeticum. (C)

Summary Statement 40. Dermatophytic infections can complicate atopic dermatitis and may contribute to exacerbation (D) of disease activity. (LB)

#### Emotional Stress

Summary Statement 41. Emotional factors do not cause atopic dermatitis but often cause exacerbation and have been found to induce immune activation as well as increase pruritus and scratching. (D)

## Patient Education

Summary Statement 42. To achieve effective control of atopic dermatitis, it is important to educate patients and family members about the chronic nature of atopic dermatitis, exacerbating factors, and appropriate treatment options, including patient support organizations to enhance adherence. (B)

## Treatment of the Difficult-to-Manage Patient

### Wet Dressing and Occlusion

Summary Statement 43. Wet dressings may serve as an effective barrier against persistent scratching, allowing more rapid healing of excoriated lesions. (B)

Summary Statement 44. Application of wet-wrap dressings in combination with topical corticosteroids can be efficacious in the treatment of refractory atopic dermatitis. (A)

### Allergen Immunotherapy

Summary Statement 45. Although the effectiveness of allergen immunotherapy in the treatment of atopic dermatitis has not been conclusively demonstrated, there are selected patients with atopic dermatitis who may benefit from such treatment. (F)

### Systemic Corticosteroids

Summary Statement 46. The use of systemic corticosteroids may be required in the treatment of severe, recalcitrant chronic atopic dermatitis. (F)

Summary Statement 47. The dramatic clinical improvement that may occur after administration of systemic corticosteroids may be associated with an equally dramatic rebound flaring of atopic dermatitis following discontinuation of systemic corticosteroids. (D)

### Phototherapy

Summary Statement 48. Natural sunlight can be beneficial for atopic dermatitis, but sunburn and overheating should be avoided. (A)

Summary Statement 49. Ultraviolet therapy can be a useful adjunct in the treatment of recalcitrant atopic dermatitis. (D)

Summary Statement 50. Phototherapy with ultra-violet light A (PUVA) should be restricted to patients with recalcitrant atopic dermatitis. (B)

### Systemic Immunomodulating Agents

Summary Statement 51. Immunosuppressive agents such as cyclosporin, interferon gamma, mycophenolate mofetil, and azathioprine have been shown to

provide benefit for certain cases of severe refractory atopic dermatitis, but potential benefits should be weighed against their potentially serious adverse effects. (F)

#### Hospitalization

Summary Statement 52. Hospitalization can result in an improvement in atopic dermatitis by removing the patient from environmental allergens and irritants and by providing patient education and improving compliance. (D)

#### Investigative Approaches

Summary Statement 53. There are certain investigative treatments that have been proposed for the management of atopic dermatitis. These remain unproven at this time. (D)

#### Consultation with an Atopic Dermatitis Specialist

Summary Statement 54. Patients refractory to first-line therapy should be evaluated by an atopic dermatitis specialist. (F)

#### Definitions:

#### Strength of Recommendations

- A. Directly based on category I evidence
- B. Directly based on category II evidence or extrapolated from category I evidence
- C. Directly based on category III evidence or extrapolated from category I or II evidence
- D. Directly based on category IV evidence or extrapolated from category I, II, or III evidence
- E. Directly based on category LB evidence
- F. Based on consensus of the Joint Task Force on Practice Parameters

#### Category of Evidence

Ia Evidence from meta-analysis of randomized controlled trials

Ib Evidence from at least 1 randomized controlled trial

IIa Evidence from at least 1 controlled study without randomization

IIb Evidence from at least 1 other type of quasi-experimental study

III Evidence from nonexperimental descriptive studies, such as comparative studies, correlation studies, and case control studies

IV Evidence from expert committee reports or opinions or clinical experience of respected authorities, or both

LB Evidence from laboratory-based studies

## CLINICAL ALGORITHM(S)

An algorithm is provided in the original guideline document for the diagnosis and management of atopic dermatitis.

## EVIDENCE SUPPORTING THE RECOMMENDATIONS

### TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified for each recommendation (see "Major Recommendations").

## BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

### POTENTIAL BENEFITS

- Accurate diagnosis, evaluation, and management of atopic dermatitis
- Relief of symptoms
- Reduction in cutaneous inflammation

### POTENTIAL HARMS

- Skin hydration: Lotions and creams may be irritating due to preservatives, solubilizers, and fragrances. Lotions also contain water and may be drying due to an evaporative effect. Occlusive ointments are sometimes not well tolerated because of interference with the function of the eccrine sweat ducts and may induce the development of a sweat retention dermatitis. An increased incidence of peanut allergy has been reported in children in the United Kingdom using emollients with refined peanut oil for atopic dermatitis.
- Topical corticosteroids: Certain areas of the body, including the mucous membranes, the genitalia, the eyelids, the face, and intertriginous areas, have increased potential for transepidermal corticosteroid penetration, and for this reason, potent fluorinated corticosteroids should be avoided in these areas. Adverse effects from topical corticosteroids are directly related to the potency ranking of the compound and the duration of use. It is incumbent on the clinician to balance the need for therapeutic potency with the potential for adverse effects. Adverse effects from topical corticosteroids can be divided into local and systemic adverse effects. The latter, which occurs rarely, includes suppression of the hypothalamic-pituitary-adrenal axis. Local adverse effects include the development of striae and atrophy of the skin, perioral dermatitis, rosacea, and allergic contact dermatitis (due to the vehicle in most cases and after use of nonfluorinated corticosteroids). Systemic adverse effects are related to the potency of the topical corticosteroid, the site of application, the occlusiveness of the preparation, the percentage of the body covered, and the length of use. The potential for prolonged use of potent topical corticosteroids to cause adrenal suppression is greatest in small children and infants.



- Tacrolimus: A local burning sensation is the most common adverse effect associated with tacrolimus.
- Tar preparations should not be used on acutely inflamed skin, since this may result in additional skin irritation. There is a theoretical risk of tar being a carcinogen based on observational studies of workers using tar components in their occupation. Adverse effects associated with tars include folliculitis and, occasionally, photosensitivity.
- Wet dressings: Patients should be monitored carefully for secondary microbial infection and adrenal suppression when wet-wrap dressings are used for prolonged periods in combination with potency corticosteroids.
- Phototherapy: Short-term adverse effects from phototherapy may include erythema, skin pain, pruritus, and pigmentation. Potential long-term adverse effects include premature skin aging and cutaneous malignancies. Sunburn and overheating should be avoided with natural sunlight
- Systemic immunomodulating agents: Immunosuppressive agents such as cyclosporin, interferon gamma, mycophenolate mofetil, and azathioprine may have potentially serious adverse effects.
  - Cyclosporin: nausea, abdominal discomfort, hypertrichosis, paresthesias, hypertension, hyperbilirubinemia, renal impairment
  - Interferon gamma: influenza-like symptoms early in the treatment course
  - Mycophenolate mofetil: occasional herpes retinitis and dose-related bone marrow suppression
  - Azathioprine: myelosuppression

## QUALIFYING STATEMENTS

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- This parameter was edited by Dr. Nicklas in his private capacity and not in his capacity as a medical officer with the Food and Drug Administration. No official support or endorsement by the Food and Drug Administration is intended or should be inferred.
- This is complete and comprehensive document at the current time. The medical environment is a changing environment and not all recommendations will be appropriate for all patients.
- Because this document incorporated the efforts of many participants, no single individual, including those who served on the Joint Task Force, is authorized to provide an official American Academy of Allergy, Asthma, and Immunology (AAAAI) or American College of Allergy, Asthma, and Immunology (ACAAI) interpretation of these practice parameters. Any request for information about or an interpretation of these practice parameters by the AAAAI or the ACAAI should be directed to the Executive Offices of the AAAAI, the ACAAI, and the Joint Council of Allergy, Asthma, & Immunology (JCAAI).
- These parameters are not designed for use by pharmaceutical companies in drug promotion.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

## IMPLEMENTATION TOOLS

### Clinical Algorithm

For information about [availability](#), see the "Availability of Companion Documents" and "Patient Resources" fields below.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Getting Better  
Living with Illness

### IOM DOMAIN

Effectiveness  
Patient-centeredness

## IDENTIFYING INFORMATION AND AVAILABILITY

### BIBLIOGRAPHIC SOURCE(S)

Leung DY, Nicklas RA, Li JT, Bernstein IL, Blessing-Moore J, Boguniewicz M, Chapman JA, Khan DA, Lang D, Lee RE, Portnoy JM, Schuller DE, Spector SL, Tilles SA. Disease management of atopic dermatitis: an updated practice parameter. Joint Task Force on Practice Parameters. Ann Allergy Asthma Immunol 2004 Sep;93(3 Suppl 2):S1-21. [127 references] [PubMed](#)

### ADAPTATION

Not applicable: The guideline was not adapted from another source.

### DATE RELEASED

1997 Sep (revised 2004 Sep)

### GUIDELINE DEVELOPER(S)

American Academy of Allergy, Asthma and Immunology - Medical Specialty Society  
American College of Allergy, Asthma and Immunology - Medical Specialty Society  
Joint Council of Allergy, Asthma and Immunology - Medical Specialty Society

### GUIDELINE DEVELOPER COMMENT

These guidelines were developed by the Joint Task Force on Practice Parameters for Allergy and Immunology, which is sponsored by the American Academy of Allergy, Asthma, and Immunology, the American College of Allergy, Asthma, and Immunology and the Joint Council of Allergy, Asthma and Immunology.

#### SOURCE(S) OF FUNDING

Funded by the American Academy of Allergy, Asthma, and Immunology (AAAAI), the American College of Allergy, Asthma, and Immunology (ACAAI), and the Joint Council of Allergy, Asthma, and Immunology (JCAAI).

#### GUIDELINE COMMITTEE

Joint Task Force on Practice Parameters

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#### FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

#### ENDORSER(S)

American Academy of Pediatrics - Medical Specialty Society

## GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Joint Council of Allergy, Asthma and Immunology. Disease management of atopic dermatitis: a practice parameter. Ann Allergy Asthma Immunol 1997 Sep; 79(3): 197-211.

## GUIDELINE AVAILABILITY

Electronic copies: Available from the [Joint Council of Allergy, Asthma, and Immunology \(JCAAI\) Web site](#).

Print copies: Available from JCAAI, 50 N. Brockway, Ste 3-3 Palatine, IL 60067.

## AVAILABILITY OF COMPANION DOCUMENTS

None available

## PATIENT RESOURCES

None available

## NGC STATUS

This summary was completed by ECRI on October 1, 1998. The information was verified by the guideline developer on December 15, 1998. This NGC summary was updated by ECRI on May 9, 2005. The updated information was verified by the guideline developer on May 23, 2005. This summary was updated by ECRI on January 31, 2006, following release of a public health advisory from the U.S. Food and Drug Administration regarding the use of Elidel Cream (pimecrolimus) and Protopic Ointment (tacrolimus).

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Date Modified: 9/25/2006

